



Enabling Intensive Life Cycle Support Management by Machine - Readable Unique Item Identifiers



Item Unique Identification (IUID) Objective

- IUID is a common sense approach:
 - Mark items¹ with machine readable unique item identifiers (UIIs)
 - Centrally register UII pedigree data and value for each marked item
 - Retrieve UII from item in use through automatic data capture
 - Make UII a common key in acquisition, supply, maintenance and financial data bases to associate:
 - Value to items
 - Maintenance history to items
 - Item accountability to organizations
 - Locations to items
- IUID helps to achieve value and extend resources:
 - Exploits automatic data capture to improve productivity
 - Enhances precision of logistics, contracting, and financial business transactions
 - Consistently captures the value of items DoD buys, controls these items during their use, and improves item performance
 - Tracks items in property accountability, inventory, and financial management systems toward achieving compliance with the Chief Financial Officers Act.
 - Expands the population of serialized items (UIIs) available for intensive life cycle management support processes

¹ – Items over \$5,000 in unit cost + serially managed, mission essential or sensitive items under \$5,000 + DoD serially managed embedded items regardless of cost and their parent item



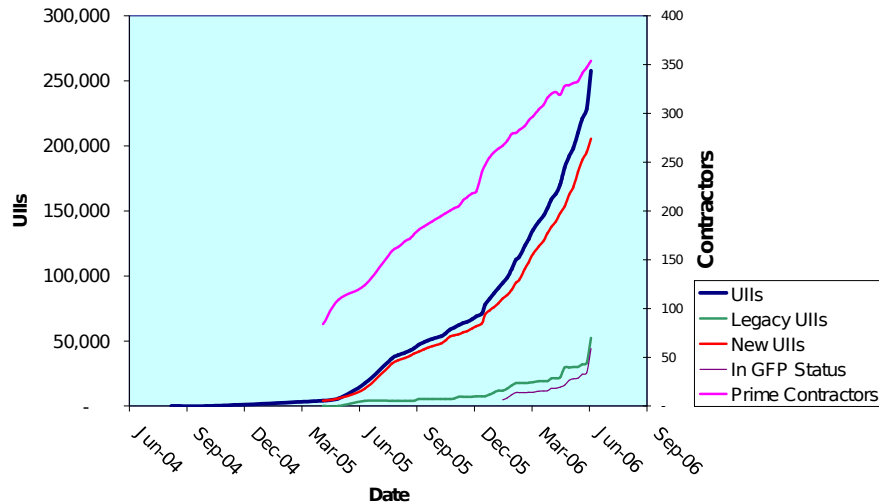
IUID Registry Statistics

(through 7 June 06)

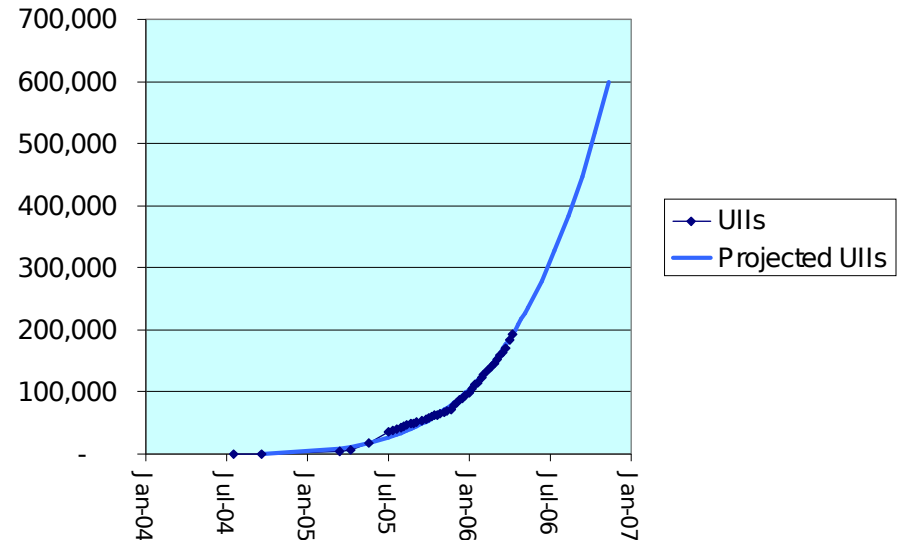
Goal: 97M UIIs

Registry Growth

IUID Registry Population



- **257,772 Items registered**
- **205,431 New items**
- **52,341 Legacy**
- **354 Contractors have delivered new UIIs**
- **208 of the contractors (59%) are small businesses**



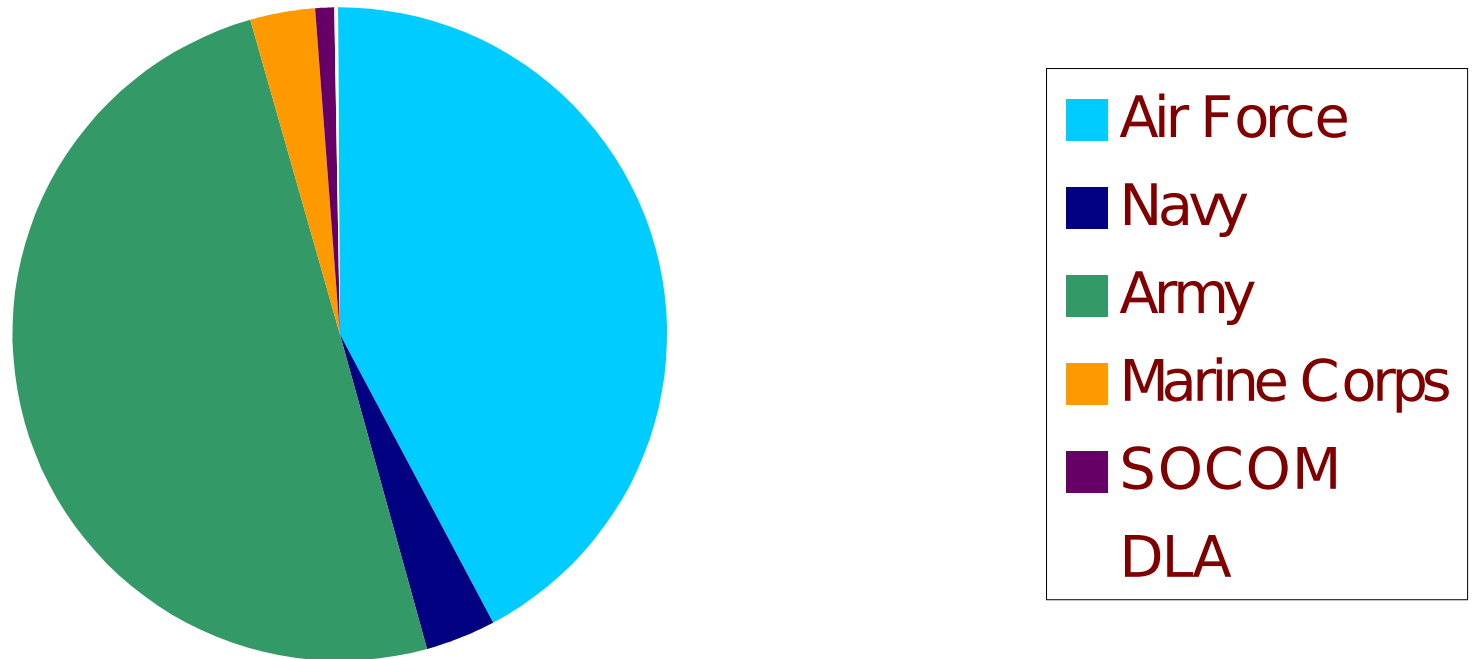
- **Average growth rate over 15,000 UIIs/week**
- **44,171 Items are in GFP status**
- **3,620 contracts with GFP listed**



UIIs by Component

(Through 7 June 06)

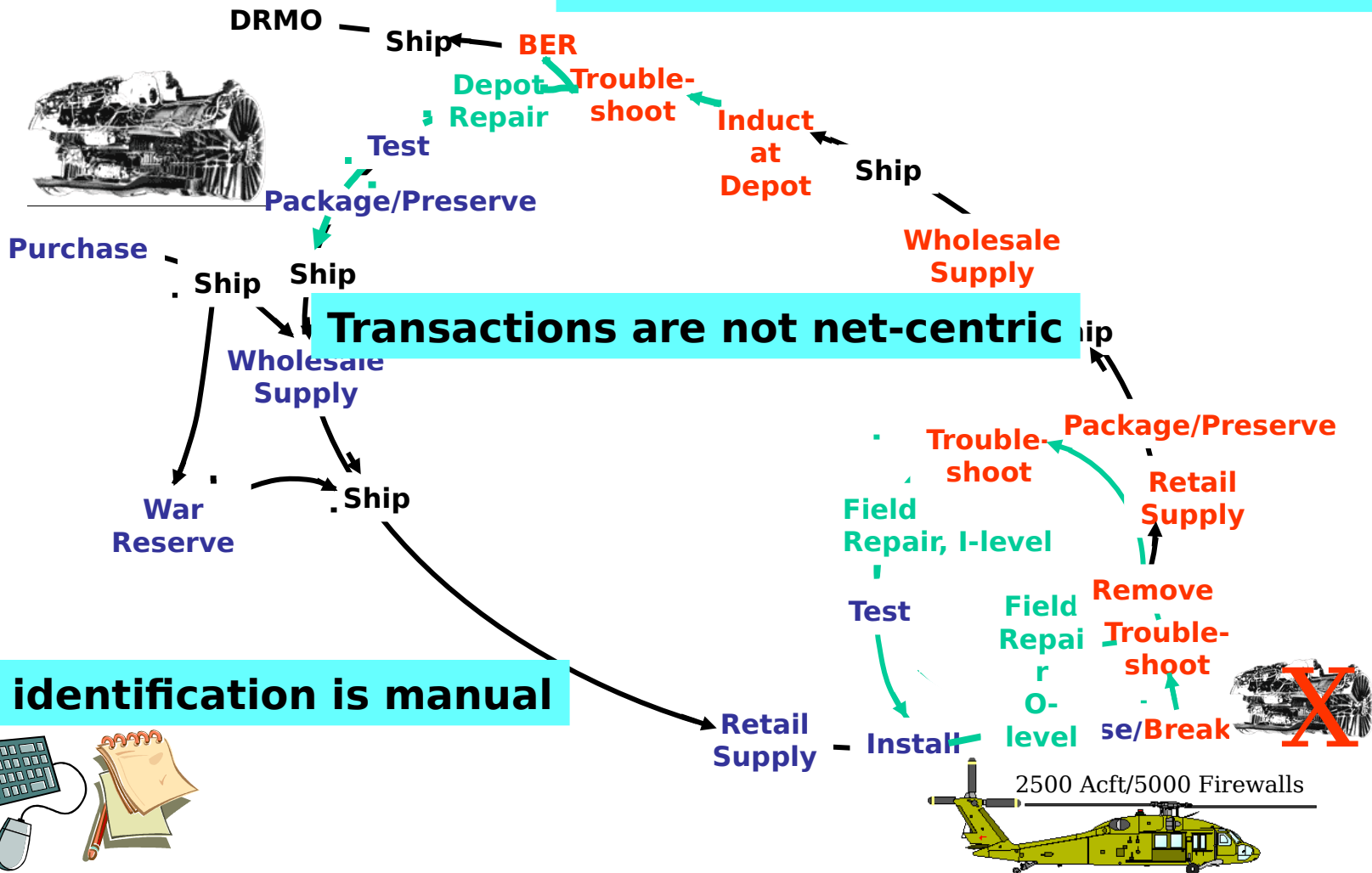
New UIIs





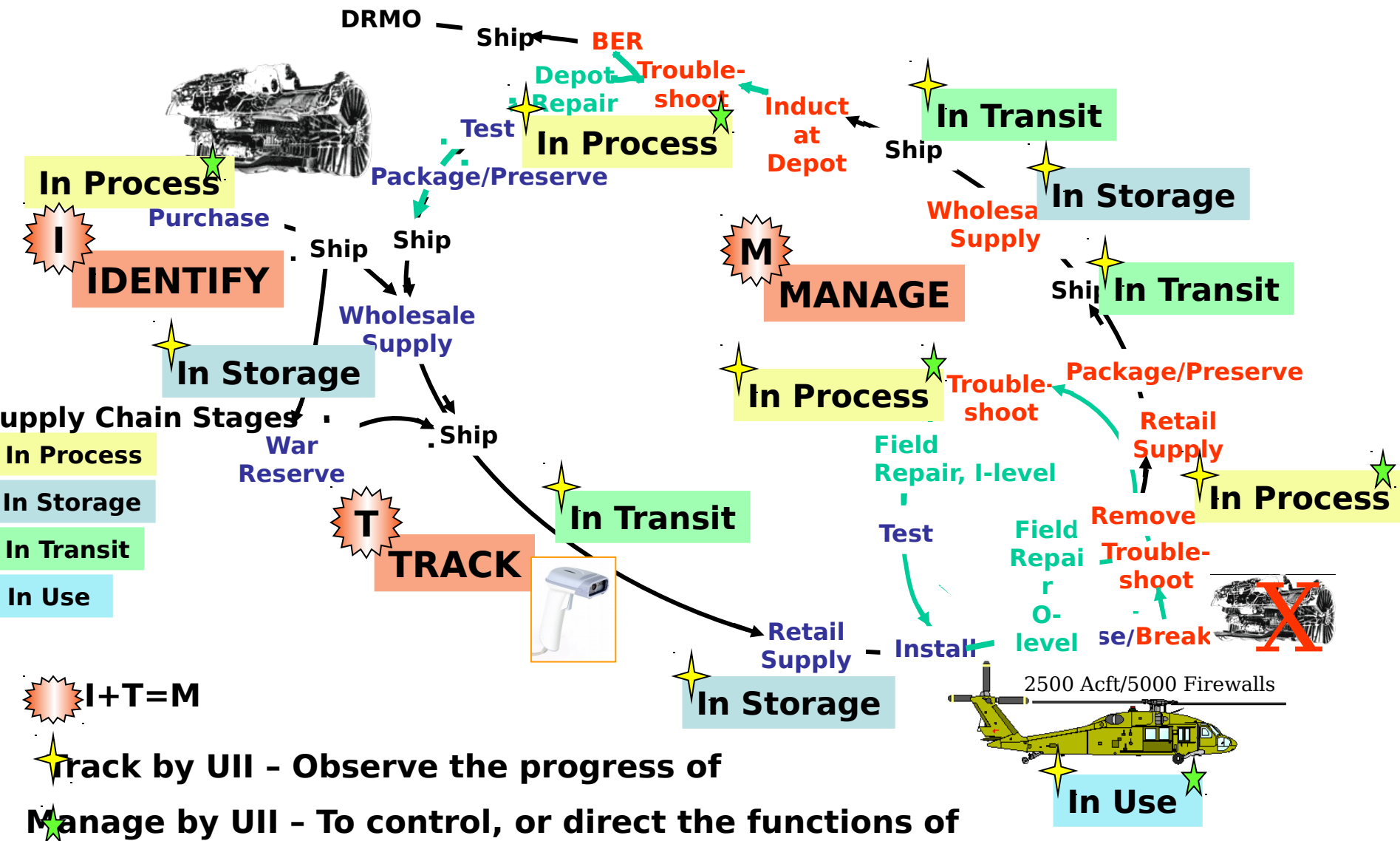
Life Cycle Management Support and Asset Visibility Dynamics Today

Items have to be identified at every step





Identify + Track = Manage: Supply Chain Use of the UII





Life Cycle Support and Visibility Enabled by Automatic Information Data Capture



Automatic identification and data capture (AIDC) eliminates error-prone and time-consuming manual data collection and data entry. AIDC provides quick, accurate, and cost-effective collection and entry of data.



STEP 1: Mark Items **STEP 2: Register Data** **STEP 3: Automatic Data Capture**



WAWF



Unique Item Identifier (UII)

- Class I - Subsistence
- Class II - Clothing & Individual Equip
- Class III - Fuels & Petroleum (Packaged)
- Class IV - Construction (Installed Equip)
- Class V - Ammunition
- Class VII - Major Items
- Class VIII - Medical
- Class IX - Repairables

Estimated Scope of UII Coverage

Metric	Quantity (millions)
UII Items in DoD Inventory	67.7
Property in Possession of Contractors	29.5
...	...

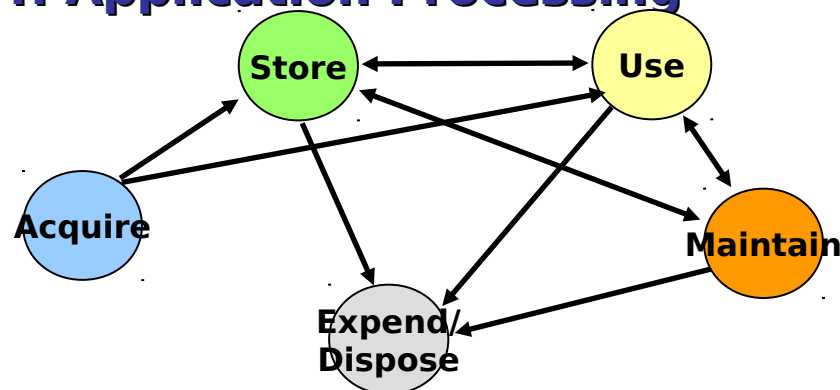
UID Registry

Retrieval

Updates

Transactions

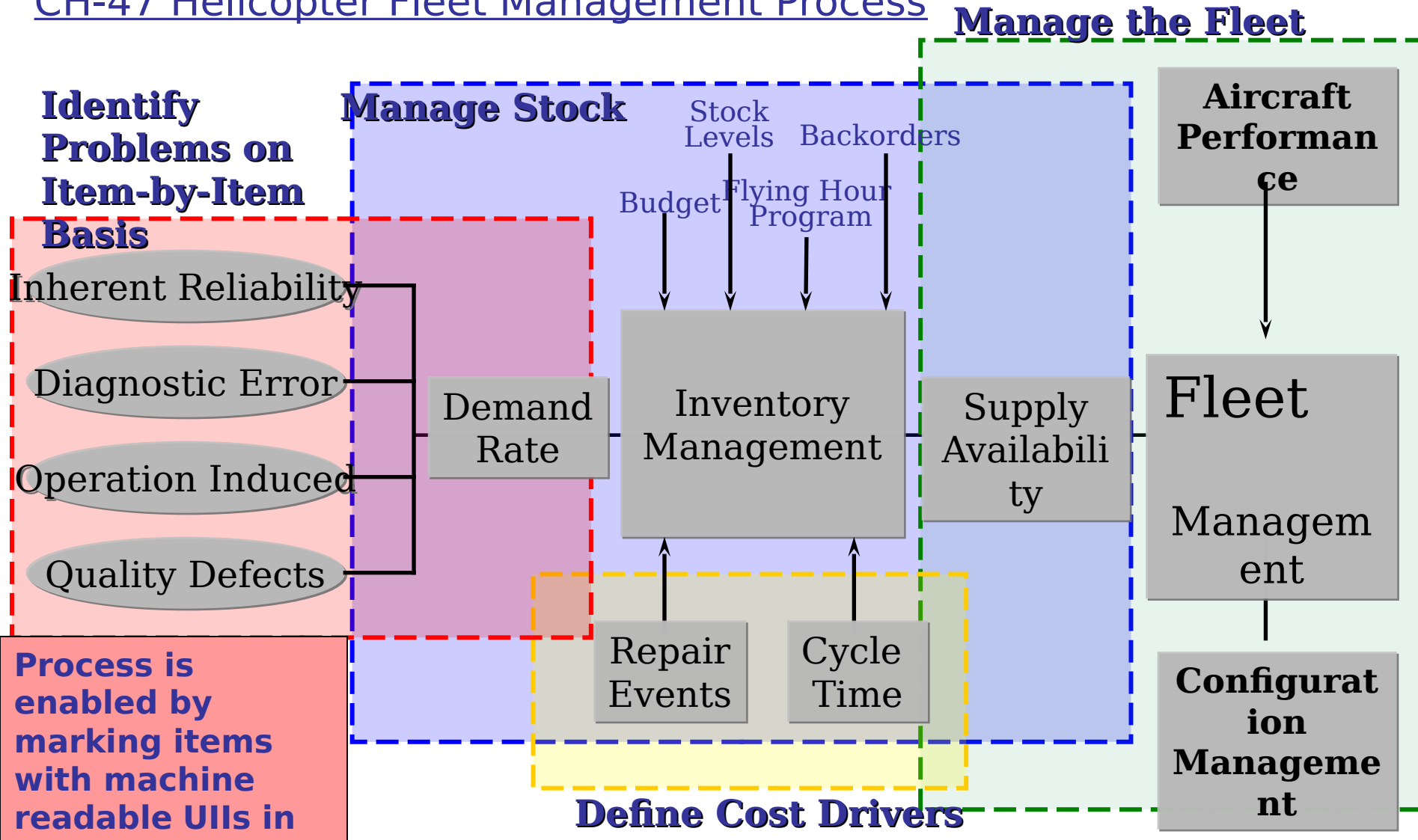
STEP 4: Application Processing





Why Intensive Life Cycle Management Support?

CH-47 Helicopter Fleet Management Process

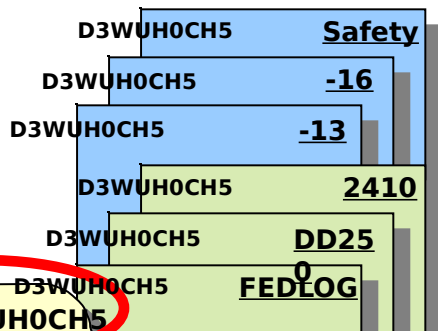




IUID as a Fleet Management Enabler

CH-47 Helicopter Fleet Management Process

User Requirement



**Transmission, Aft
145D2300-4**

Maintenance & Supply Actions

D3WUH0CH5

PMO Support

Customer Support Center

Soldier Focused Logistics

- Information
- Safety Messages
- Diagnostics
- Knowledge Mgmt.
- Customer Support
- Technical Data
- Training
- Feedback

Data Delivery Systems (AIS)

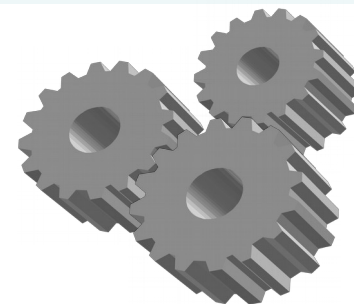
*Forms, records,
agreements*

*Forms, records,
contracts*

Data Delivery Systems (AIS)

D3WUH0CH5

Team Support



Industry

- OEM
- CSFR

Organic Assistance

- Depot
- Inter-Service
- USAALS
- TMDE
- AVIM
- Etc.

Machine-Readable UII is the consistent key from factory to field!



Legacy Unique Item Tracking

- (a) Serial Number Tracking (SNT) efforts exist today for such items as high-value parts, classified assets, aviation “safety-of-flight” parts and many missile system components. They may or may not be registered as Unique Item Tracking programs.
- (b) Unique Item Tracking (UIT) programs for selected items maintain visibility of each uniquely identified asset for the primary purpose of inventory control and/or engineering analysis. Security, accountability, safety, maintenance, operational readiness, warranty applicability, and other areas that may benefit from the tracking process are also reasons for UIT.



Registered Unique Item Tracking (UIT) Programs

Note: No uniform use of machine-readable marking

UIT Program	Program Originator
DoD Small Arms Serialization Program (DoD SASP)	DoD 4140.1-R Requirement
Security Risk Category I Non-Nuclear Missiles and Rockets	DoD 4140.1-R Requirement
Radiation Testing and Tracking System (RATTS) Program	Army
Navy Depot Level Reparables (NDLR) Program	Navy
The Army Maintenance Management System (TAMMS) Equipment Data Base (TEDB)	Army
Aviation Component Tracking Program	Army
Tritium Unique Item Tracking Program	Army
Controlled Cryptographic Items (CCI)	Army



Capabilities Enabled by Unique Identification of Items

Key: Machine-readable marking required to enhance data capture

Usage Function	Enabling Capability
Tracking Item Performance, Age and Modification Results	<ul style="list-style-type: none">➤ Track performance of items by manufacturer and by lot➤ Reduce the premature condemnation of life-limited items through enhanced availability of accurate usage data➤ Track performance of various configurations for comparing, controlling, and scheduling of modification and updates of items as improvements are identified➤ Separate cause from symptom and then track the configuration of components to speed the correction-of-deficiency process and to assist in determining if an approved engineering change has accomplished its intended purpose
Failure Analysis and Reliability Improvement	<ul style="list-style-type: none">➤ Isolate failures and their causes through identification of specific configurations of an item and its parent component or system➤ Increase the reliability of repaired components via the identification and removal of "bad actor" components
Maintenance Productivity	<ul style="list-style-type: none">➤ Enable identification of problem equipment through historical analysis; ordering spares that match the configuration of the end item; and better scheduling of maintenance➤ Reduce the need for complete replacement of parts and subassemblies by having detailed histories of systems and equipment➤ Improve maintenance data collection systems through use of automatic data capture
Supply Productivity	<ul style="list-style-type: none">➤ Improve requirements calculations and issue decisions by being able to order parts by specific configuration, and by updating source, maintenance and recoverability codes, which result in better provisioning.➤ Improve weapon system readiness by improving system availability.
Safety and Accountability	<ul style="list-style-type: none">➤ Improve system safety by tracking usage data on life-limited, safety-related components, and establishing the capability to locate quickly parts with a suspected or confirmed safety problem so that they can be inspected, analyzed, and removed➤ Consistently account for the physical security of sensitive items and the accountability of non-sensitive items with speed and precision



Machine - Readable IUID Enabled Capabilities

Note: SNT/UIT do not uniformly enable machine-readable data capture

Supply Class	Engineering Design	Tracking Item Performance	Failure Analysis	Maintenance Productivity	Supply Productivity	Safety and Accountability
Class I						IUID
Class II	IUID	IUID	IUID	IUID	IUID	IUID
Class III					IUID ¹	IUID ¹
Class IV	IUID ²	IUID ²	IUID ²	IUID ²	IUID ²	IUID ²
Class V	IUID	IUID	IUID	IUID	IUID	IUID
Class VI						
Class VII	IUID/SNT ³	IUID/SNT ³	IUID/SNT ³	IUID/SNT ³ /UIT ⁴	IUID	IUID/SNT ³ /UIT ⁵
Class VIII	IUID/SNT ⁶	IUID/SNT ⁶	IUID	IUID/SNT ⁶	IUID/SNT ⁶	IUID/SNT ⁶
Class IX	IUID/SNT ⁷	IUID/SNT ⁷	IUID/SNT ⁷	IUID/SNT ⁷ /UIT ⁸	IUID/SNT ⁷	IUID/SNT ⁷

Notes: 1 – Packaged products; 2 – Installed equipment; 3 – Classified assets; 4 – TAMMS TEDB; 5 – SASP; CIC CAT 1 Items; RATTs, Tritium, CCI; 6 – DMLSS; 7 – High-value parts, aviation safety of flight parts, missile components; 8 – NDLR, TAMMS-A

SNT/UIT – Legacy item tracking



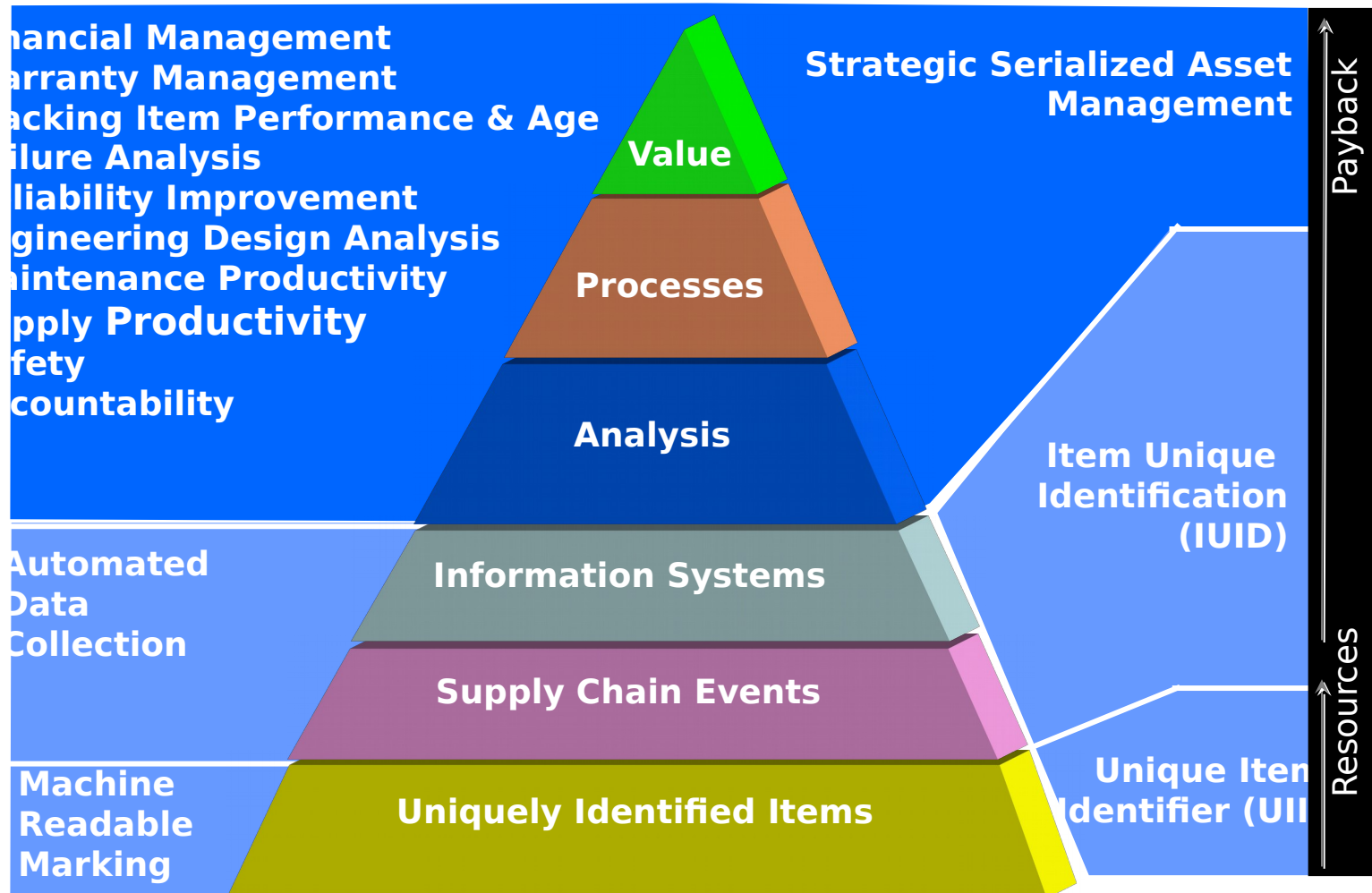
IUID Enabled Intensive Life Cycle Support Management

Speed and Precision in Data Capture

Capabilities

Requirements

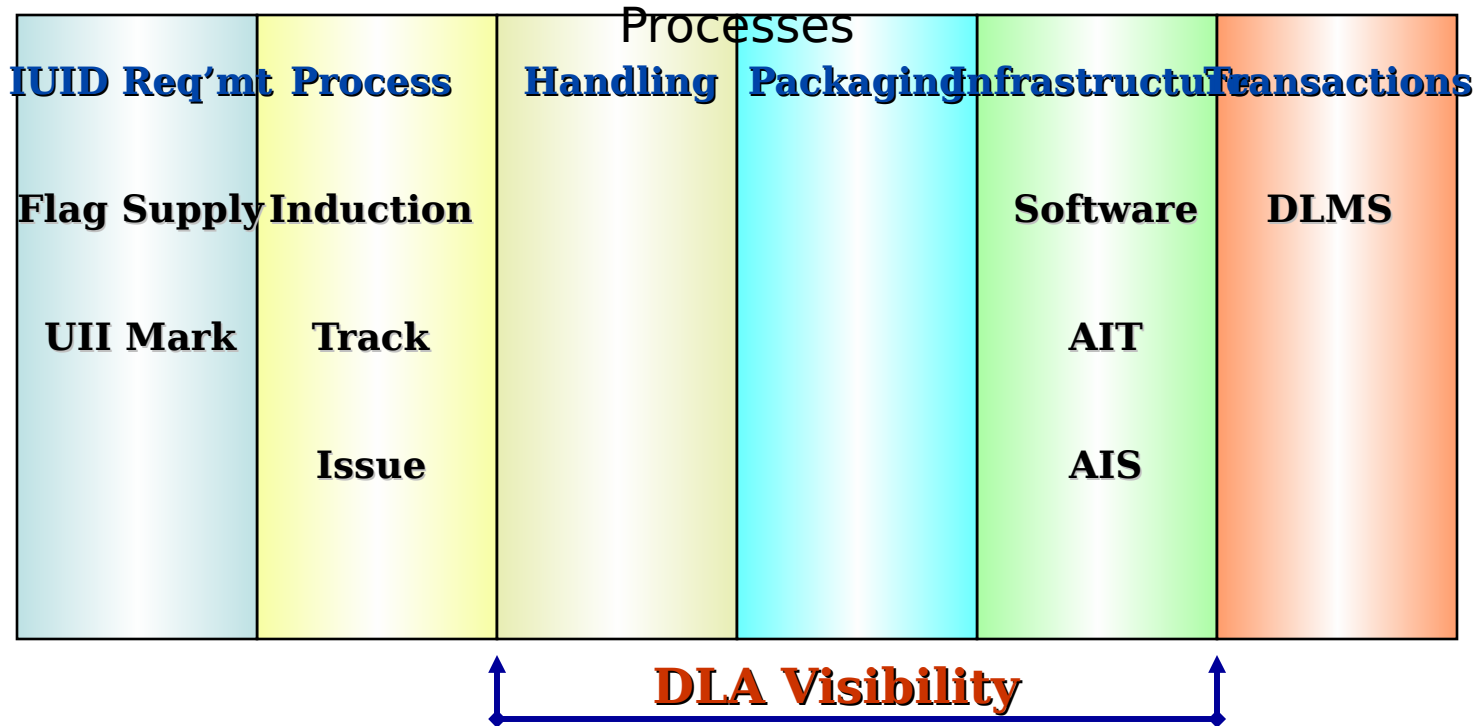
Objectives





IUID Spectrum in Supply Chain Management

Spectrum of IUID Impact in Supply Chain Management



ISSUE – How do we flag UII marking requirements for items that DLA buys?



UID Traceability TEAM DLA

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IUID: Enabler for Broader Intensive Life Cycle Support Management

DOD Item Inventory

1 - Items over \$5,000 in unit cost or serially managed, mission essential or sensitive items under \$5,000 or DoD serially managed embedded items regardless of cost and their parent item

DOD items uniquely identified¹, marked with machine-readable data matrix to enable automatic information data capture and registered in the IUID Registry

SNT

UIT

NALCOMIS

NALDA

NDLR

FACTS

DSS

DMLSS

COE

CAV

CIC CAT 1

TEDB

ATAC

TMARS

RATTS

AFEMS

TAMMS-A

TRITIUM

LMP

CCI

PBUSE

AWRDS

DPAS

UICP

SASP

Examples of Existing and Planned Accountability, Maintenance or Security Systems



Preliminary Inventory of Existing Service Property Systems

	Air Force	Army	Navy	Other
ST/STE	AFEMS	DPAS SPBS-R	eTIMS	FEPMIS PCARSS
Maintenance	DMAPS CAMS	TAMMS - A ULLS -G ULLS - A	DECKPLATE SNT NALCOMIS 3M	
Engines	CEMS	TAMMS - A TEDB	AEMS	
Major Assets	REMIS	TEDB ULLS - A ULLS - G	AIRRS ATCM AIM SNT	CAMS

AFEMS - Air Force Equipment Management System

DMAPS - Depot Maintenance and Production System

CAMS - Core Automated Maintenance System

CEMS - Comprehensive Engine Management System

REMIS - Reliability & Maintainability Information System

DPAS - Defense Property Accountability System

SPBS-R - Standard Property Book System - Redesign

TAMMS - A - The Army Maintenance Management System
- Aircraft

ULLS -G - Unit Level Logistics - Ground

ULLS - A - Aviation

TEDB - TAMMS Equipment Data Base

eTIMS - Navy Electronic Tooling Information Management System

SNT - Serial Number Tracking

NALCOMIS - Naval Aviation Log Com Operating Maint InfoSys

3M - Maintenance and Materiel Management

AEMS - Aircraft Engine Management System

AIRRS - Aircraft Inventory Readiness and Reporting System

ATCM - Aeronautical Time Cycle Management

AIM - Asset Information Management

FEPMIS - Federal Excess Property Management Information System



Various Formats



IUID XML

























